Effect of the Alternative Quality Contract on Health Care Spending and Quality

Massachusetts Health Care Quality and Cost Council

August 17, 2011

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- Robert Mechanic
- Matthew Day

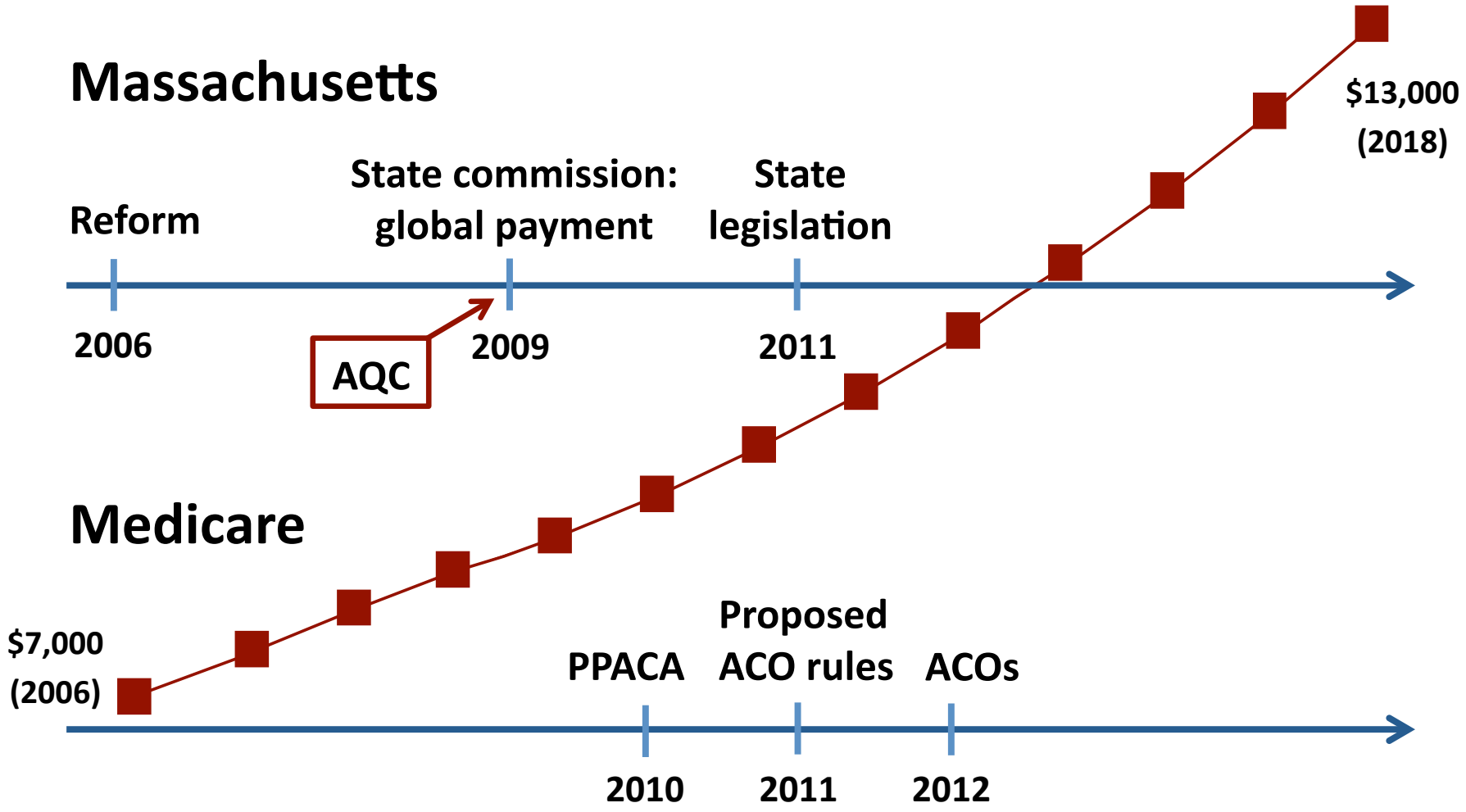
Motivation

Spending Growth

Sub-optimal Quality

Payment Reform

Landscape


Massachusetts
Reform
State commission: global payment
State legislation
2006
AQC
2009
2011
$13,000 (2018)
Medicare
$7,000 (2006)
PPACA
Proposed ACO rules
ACOs
2010
2011
2012

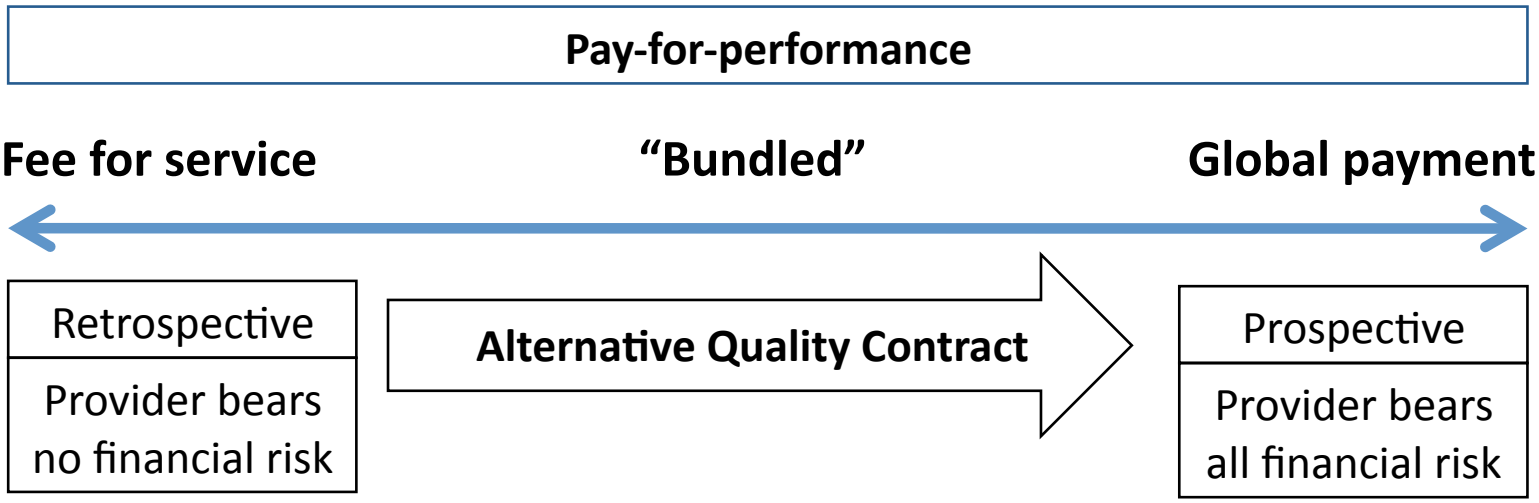
Anatomy of Provider Payment

Health Care Spending Equation:

$$\text{Spending} = P \times Q$$

Provider Payment Equation:

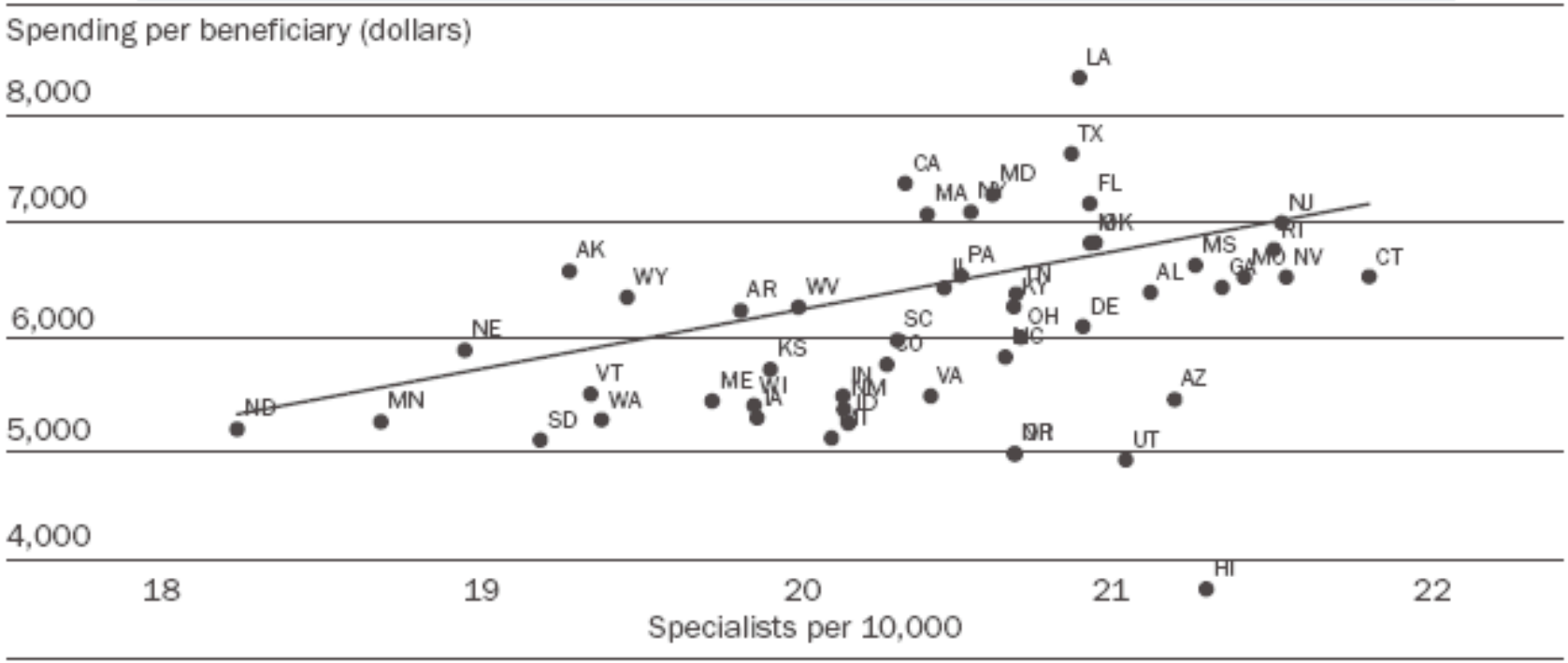
$$\text{Payment} = C + \text{Fee}*Q + B(I)$$



Specialists vs. Spending Level

EXHIBIT 7

Relationship Between Provider Workforce And Medicare Spending: Specialists Per 10,000 And Spending Per Beneficiary In 2000



SOURCES: Medicare claims data; and Area Resource File, 2003.
NOTE: Total physicians held constant.

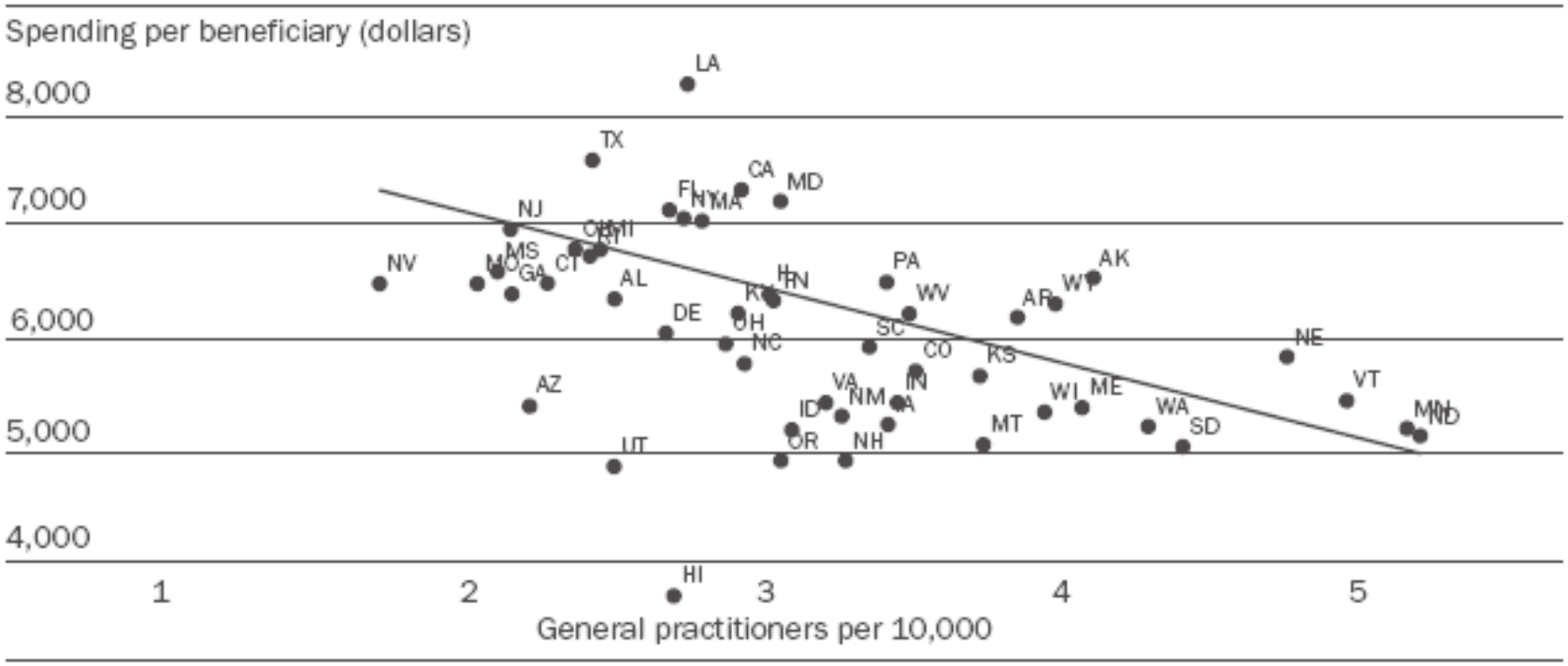
Katherine Baicker and Amitabh Chandra, Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care, Health Affairs, Web Exclusive, April 7, 2004

HEALTH AFFAIRS

PCPs vs. Spending Level

EXHIBIT 9

Relationship Between Provider Workforce And Medicare Spending: General Practitioners Per 10,000 And Spending Per Beneficiary In 2000



SOURCES: Medicare claims data; and Area Resource File, 2003.
NOTE: Total physicians held constant.

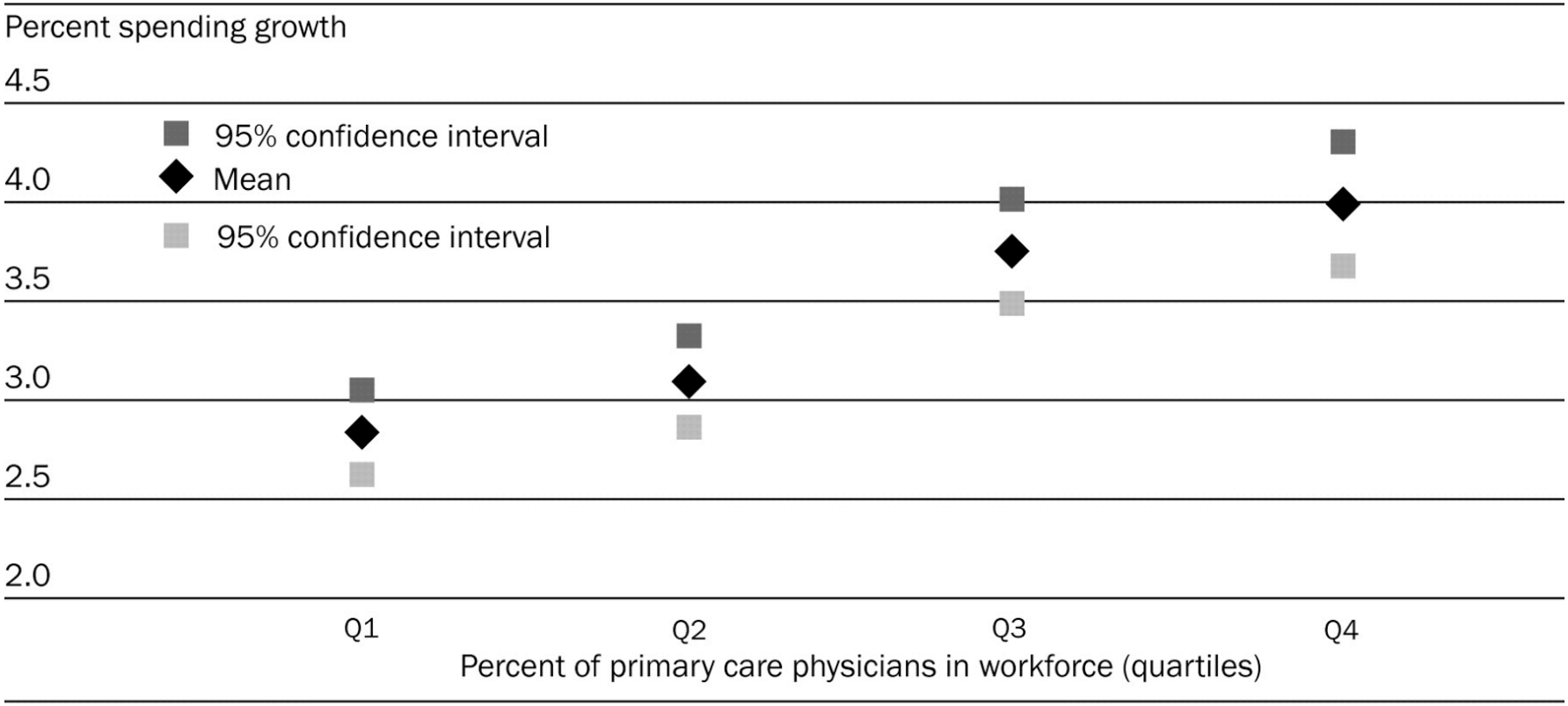
Katherine Baicker and Amitabh Chandra, Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care, Health Affairs, Web Exclusive, April 7, 2004

HEALTH AFFAIRS

PCPs vs. Spending Growth

EXHIBIT 4

Mean Unadjusted Average Annual Percentage Growth (1995–2005) In Health Spending, By Quartile Of Relative Primary Care Physician Supply In 1995



SOURCE: Authors' calculations using data from the *Dartmouth Atlas of Health Care* and the Area Resource Fi'e

Michael E. Chernew, Lindsay Sabik, Amitabh Chandra, and Joseph P. Newhouse, Would Having More Primary Care Doctors Cut Health Spending Growth?, Health Affairs, Vol 28, Issue 5, 1327-1335

HEALTH AFFAIRS

Voices of MDs in the Commonwealth

Dual Reform

1. Organization
2. Payment

Key: Risk

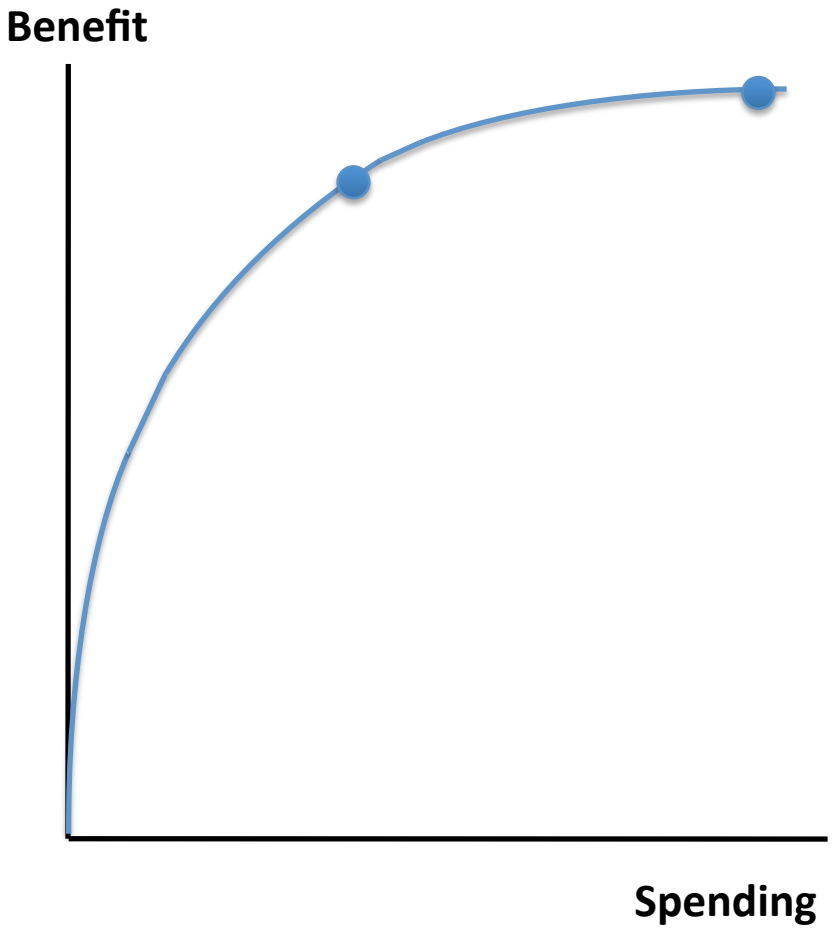
Downside Risk?
Payment model?
Quality incentives?

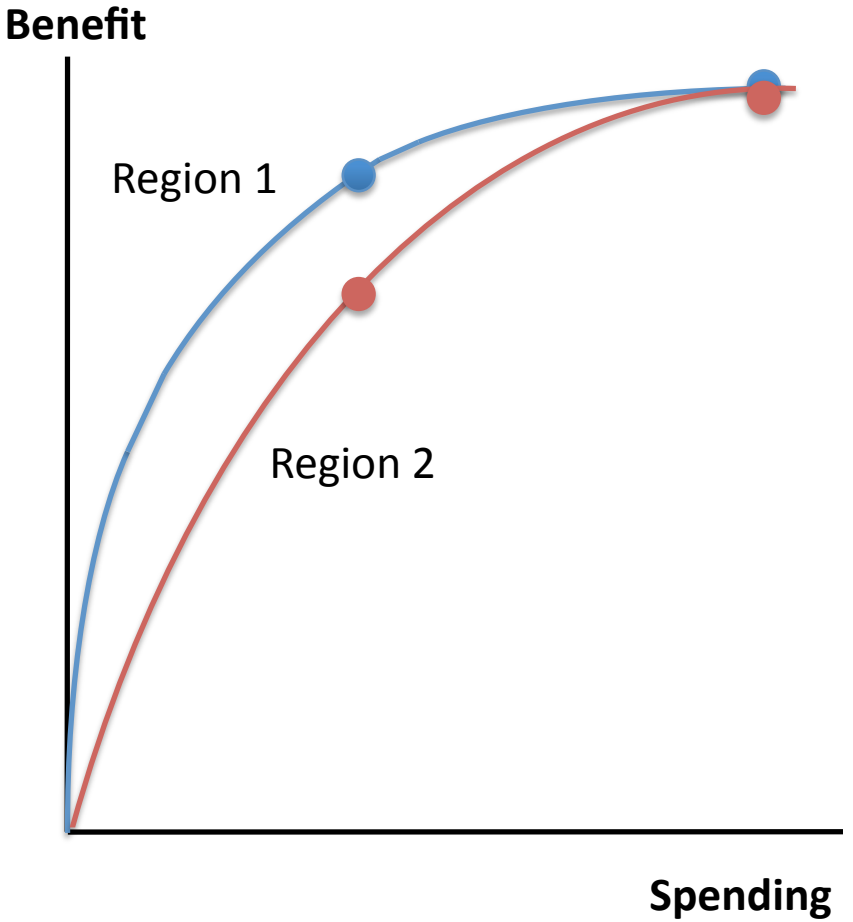
Implementation Challenges

1. Infrastructure support
2. Proper risk adjustment
3. Patient expectations
4. Patient incentives
5. Malpractice Reform
6. Transparency
7. Risk mgmt / complex pts.
8. Data from payers
9. Anti-trust reforms
10. Culture and leadership

Why not simply slash the level?

1. Induced Demand
2. Quality Concerns
3. Access Concerns
4. Hatchet vs. Scalpel





The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Health Care Spending and Quality in Year 1 of the Alternative Quality Contract

Zirui Song, B.A., Dana Gelb Safran, Sc.D., Bruce E. Landon, M.D., M.B.A., Yulei He, Ph.D., Randall P. Ellis, Ph.D., Robert E. Mechanic, M.B.A., Matthew P. Day, F.S.A., M.A.A.A., and Michael E. Chernew, Ph.D.

ABSTRACT

BACKGROUND

In 2009, Blue Cross Blue Shield of Massachusetts (BCBS) implemented a global payment system called the Alternative Quality Contract (AQC). Provider groups in the AQC system assume accountability for spending, similar to accountable care organizations that bear financial risk. Moreover, groups are eligible to receive bonuses for quality.

METHODS

Seven provider organizations began 5-year contracts as part of the AQC system in 2009. We analyzed 2006–2009 claims for 380,142 enrollees whose primary care physicians (PCPs) were in the AQC system (intervention group) and for 1,351,446 enrollees whose PCPs were not in the system (control group). We used a propensity-weighted difference-in-differences approach, adjusting for age, sex, health status, and secular trends to isolate the treatment effect of the AQC in comparisons of spending and quality between the intervention group and the control group.

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This article (10.1056/NEJMsa1101416) was published on July 13, 2011, at NEJM.org.

RESULTS

Average spending increased for enrollees in both the intervention and control groups in 2009, but the increase was smaller for enrollees in the intervention group — $15.51 (1.9%) less per quarter (P=0.007). Savings derived largely from shifts in outpatient care toward facilities with lower fees; from lower expenditures for procedures, imaging, and testing; and from a reduction in spending for enrollees with the highest expected spending. The AQC system was associated with an improvement in performance on measures of the quality of the management of chronic conditions in adults (P<0.001) and of pediatric care (P=0.001), but not of adult preventive care. All AQC groups met 2009 budget targets and earned surpluses. Total BCBS payments to AQC groups, including bonuses for quality, are likely to have exceeded the estimated savings in year 1.

CONCLUSIONS

The AQC system was associated with a modest slowing of spending growth and improved quality of care in 2009. Savings were achieved through changes in referral patterns rather than through changes in utilization. The long-term effect of the AQC system on spending growth depends on future budget targets and providers' ability to further improve efficiencies in practice. (Funded by the Commonwealth Fund and others.)

N Engl J Med 2011.

HEALTH CARE DIVISION PRESENTATION TO HEALTH CARE QUALITY & COST COUNCIL

FINDINGS FROM ATTORNEY GENERAL'S EXAMINATION OF HEALTH CARE COST TRENDS & COST DRIVERS PURSUANT TO G.L. c. 118G, § 6½(b)

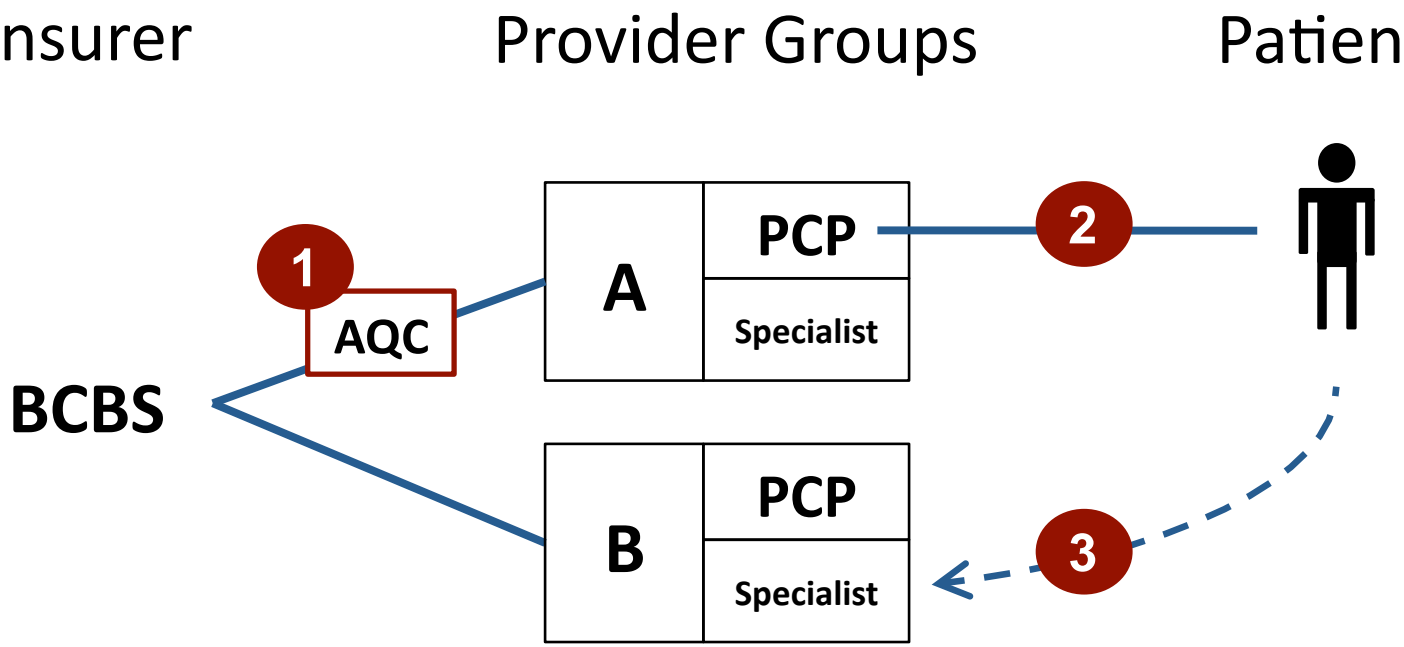
JULY 20, 2011

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY
ONE ASHBURTON PLACE • BOSTON, MA 02108

Alternative Quality Contract

- **ACO contracting model**
  - MDs and hospitals contracted together → 5 years
  - Accountable for total spending (inpt, outpt, Rx, …)
- **Spending growth controls**
  - Global payment with downside risk
  - Budget growth tied to inflation (CPI)
- **Pay-for-Performance**
  - 64 quality metrics (process, outcome, experience)
  - Large financial incentives: up to 10% of budget

Alternative Quality Contract



1. Provider groups join, not enrollees
   Negotiated rates, budget, and growth
   End-of-year budget reconciliation
   Technical support from BCBS
2. HMO/POS only: enrollee must designate PCP, seek referrals (same for non-AQC)
3. Budget covers spending on <u>any</u> provider (in or out of the AQC)

Ambulatory Measures

Process

Measure	Score	Weight
Depression		
1 Acute Phase Rx		1.0
2 Continuation Phase Rx		1.0
Diabetes		
3 HbA1c Testing (2X)		1.0
4 Eye Exams		1.0
5 Nephropathy Screening		1.0
Cholesterol Management		
6 Diabetes LDL-C Screening		1.0
7 Cardiovascular LDL-C Screening		1.0
8 Breast Cancer Screening		1.0
9 Cervical Cancer Screening		1.0
10 Colorectal Cancer Screening		1.0
Preventive Screening/Treatment		
Chlamydia Screening		
11 Ages 16-20		0.5
12 Ages 21-25		0.5
Pedi: Testing/Treatment		
13 Upper Respiratory Infection (URI)		1.0
14 Pharyngitis		1.0
Pedi: Well-visits		
15 < 15 months		1.0
16 3-6 Years		1.0
17 Adolescent Well Care Visits		1.0

Outcomes

Diabetes

18	HbA1c in Poor Control	3.0
19	LDL-C Control (<100mg)	3.0

Hypertension

20	Controlling High Blood Pressure	3.0

Cardiovascular Disease

21	LDL-C Control (<100mg)	3.0

Experience

Patient Experiences (C/G CAHPS/ACES) - Adult

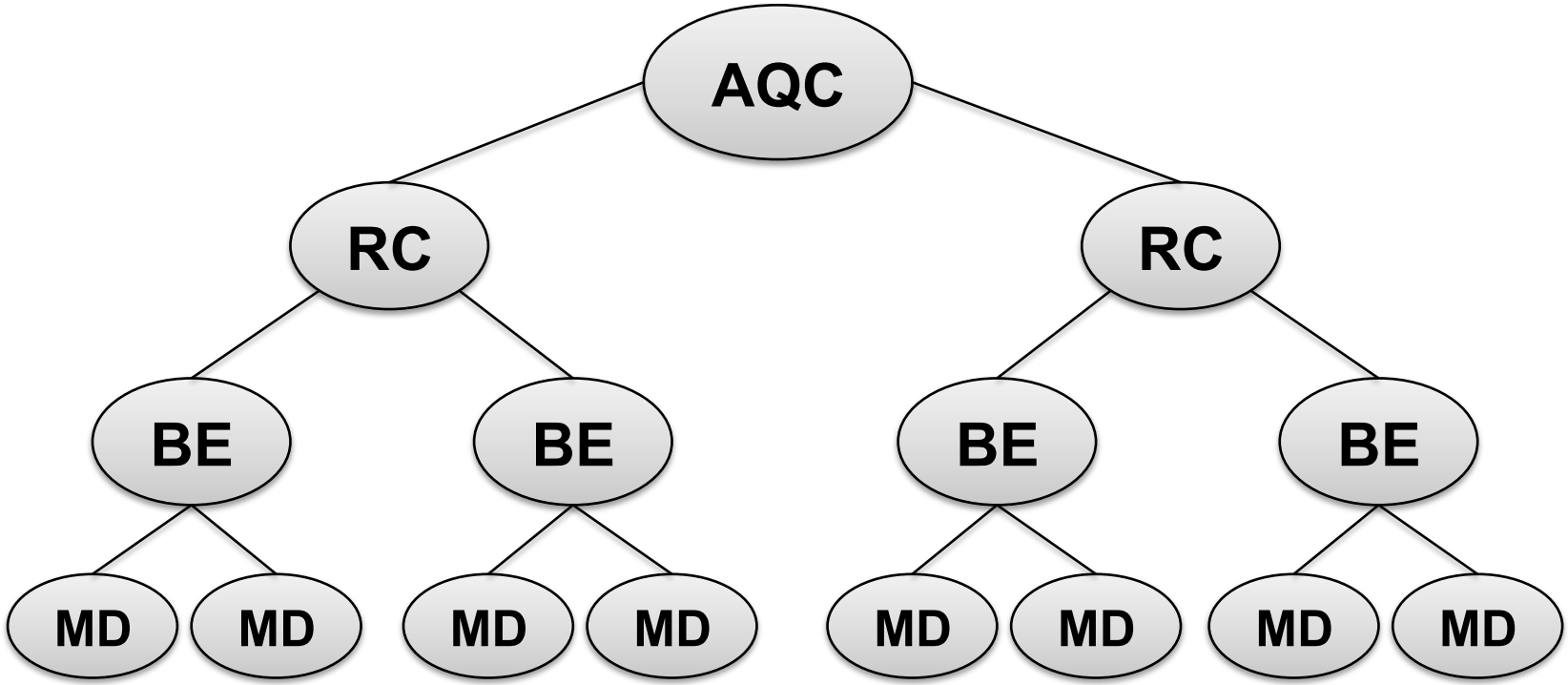
22	Communication Quality	1.0
23	Knowledge of Patients	1.0
24	Integration of Care	1.0
25	Access to Care	1.0

Patient Experiences (C/G CAHPS/ACES) - Pediatric 3

26	Communication Quality	1.0
27	Knowledge of Patients	1.0
28	Integration of Care	1.0
29	Access to Care	1.0

30	Experimental Measure A	1.0
31	Experimental Measure B	1.0

Weighted Ambulatory Score



	AQC 1	AQC 2	AQC 3	AQC 4	AQC 5	AQC 6	AQC 7
Referral Circles (RC)	5	1	1	1	3	1	3
Business Entities (BE)	66	1	28	142	345	61	134
Specialists	609	16	178	265	752	96	281
PCPs	414	72	48	108	359	52	98
Enrollees	101,754	11,376	16,554	20,427	78,090	10,925	30,486

Comparison of Studies

	NEJM paper (7/13/2011)	AGO report (6/22/2011)
Spending	**Actual spending on medical care** • Claims • Patient-level data • Reflects physician behavior	**Total medical expenses ("TME")** • Claims + non-claims • Group-level (average PMPM) • Reflects total BCBS payments
Quality	**Actual *eligible* patients** • i.e. DM patients for DM metrics • Patient-level data • BCBS patients only **2007-2009 data** • *Before* vs. *after* comparison • Reflects AQC-associated change **Outcome measures**	**All enrollees & payers** • Group-level averages • Publicly reported averages • All-payer data **2009 data** • *After* comparison only • Does not reflect AQC impact **No outcome measures**
Subjects	**All 7 AQC groups**	**5 AQC groups**
Model	**Patient-level regression** • Controls (risk, trends, etc.)	**Group-level comparison** • Group-level risk adjustment
Decompositions	**Isolates AQC-associated change**	N/A

Empirical Specifications

Level	Sample	Risk coding	Time control	Dep. Var.	Model
Monthly	48 month continuous	Continuous	Continuous (DDD)	Dollars	1-Part OLS
Quarterly	12 month continuous	Categorical	Dummies (DDD)	Ln(Dollars)	2-Part OLS (logit part 1)
Yearly	Everybody	Splines	None (DD)		
Propensity score weights					
Clustered standard errors					

$$\$ = \gamma + \delta X + \beta_1 post + \beta_2 aqc + \beta_3 time + \beta_4 post*time + \beta_5 time*aqc + \beta_6 post*aqc + \beta_7 post*aqc*time + \mu$$

Decomposition of Spending

1. Clinical category
2. Site and type of care
3. Risk-bearing experience
4. Enrollee risk quartile

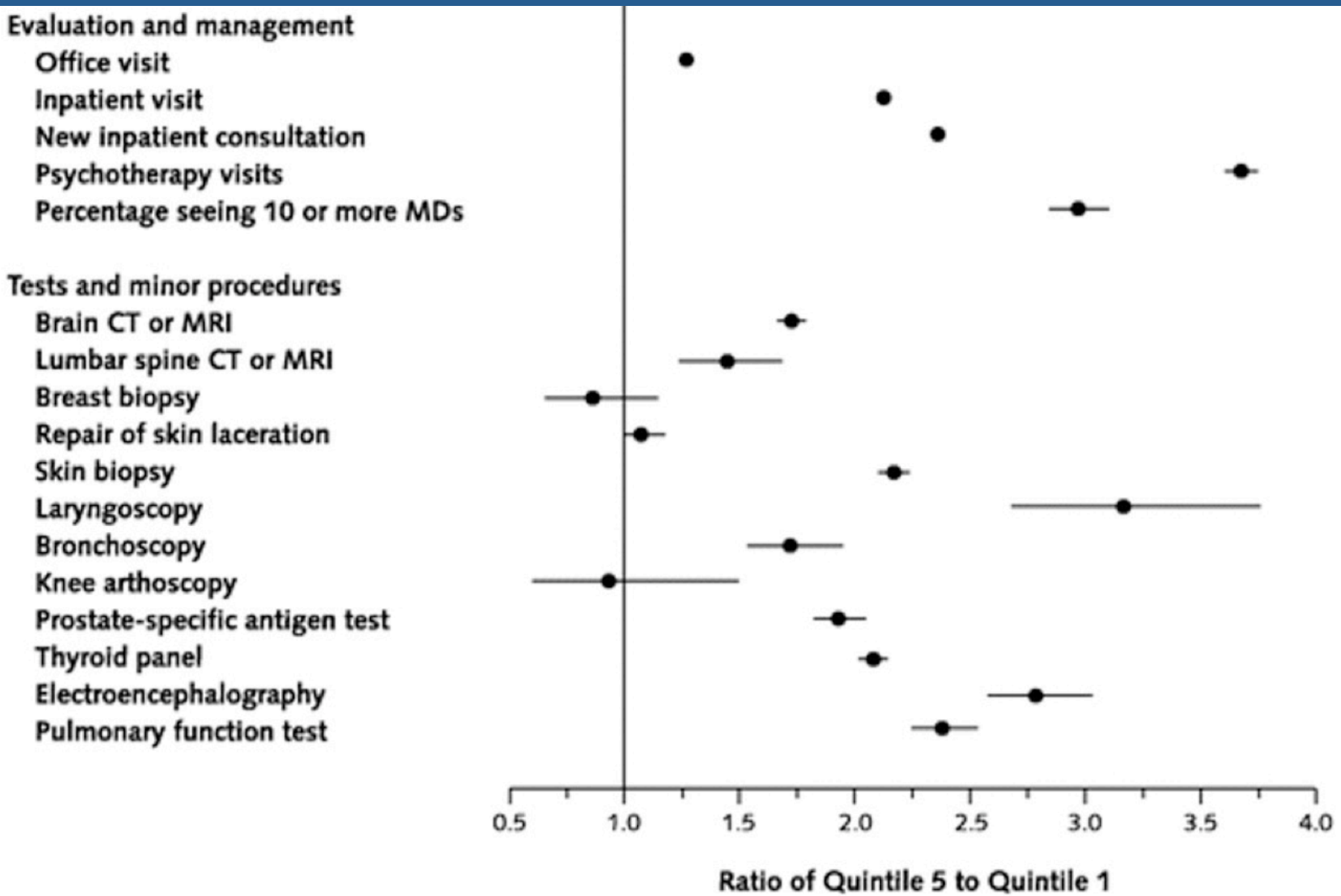
Table 1. Enrollee characteristics

	All AQC Groups (N=380,142)		Control Group (N=1,351,446)	
	Pre	Post	Pre	Post
Age (yr ± S.D.)	34.4 ± 18.6	35.3 ± 18.5	35.3 ± 18.7	35.5 ± 18.8
Female sex (%)	52.6	51.2	51.8	51.0
Health risk score	1.08	1.16	1.11	1.16
(25^{th}–75^{th} percentile)	(0.12—1.29)	(0.13—1.39)	(0.11—1.33)	(0.12—1.39)

Table 2A. All AQC groups vs. control

	All AQC Groups (N=380,142)			Control Group (N=1,351,446)			Between-Group Difference (p-value)	
	Pre	Post	Δ	Pre	Post	Δ		
Total quarterly spending ($)	756	808	53	785	854	69	**-15.51**	**(0.009)**
Spending by BETOS category								
1. Evaluation and management	180	206	25	181	208	27	**-2.22**	**(0.002)**
2. Procedures	166	176	10	168	184	16	**-5.96**	**(0.001)**
3. Imaging	94	102	8	100	112	11	**-3.47**	**(0.000)**
4. Tests	67	75	7	74	85	11	**-3.72**	**(0.000)**
5. Durable medical equipment	10	12	2	11	13	2	**-0.14**	**(0.68)**
6. Other	48	50	2	54	55	1	**0.80**	**(0.72)**
7. Exceptions/Unclassified	190	189	-1	197	197	0	**-0.80**	**(0.84)**
Spending by site and type of care								
Inpatient - professional	35	36	2	34	37	2	**-0.72**	**(0.38)**
Inpatient - facility	152	154	3	156	158	3	**0.23**	**(0.95)**
Outpatient - professional	316	350	34	300	334	34	**-0.28**	**(0.80)**
Outpatient - facility	214	230	16	255	285	30	**-14.50**	**(0.000)**
Ancillary	39	39	-1	40	40	0	**-0.24**	**(0.86)**

Where is the variation in utilization?



Chandra A, Cutler D, Song Z. "Who Ordered That? The Economics of Treatment Choices in Medical Care." *Handbook of Health Economics*, Vol. 2, forthcoming. (Authors' adaptations of Figure 5 from Fisher ES et al. *Annals of Internal Medicine* 2003;138:273-287).

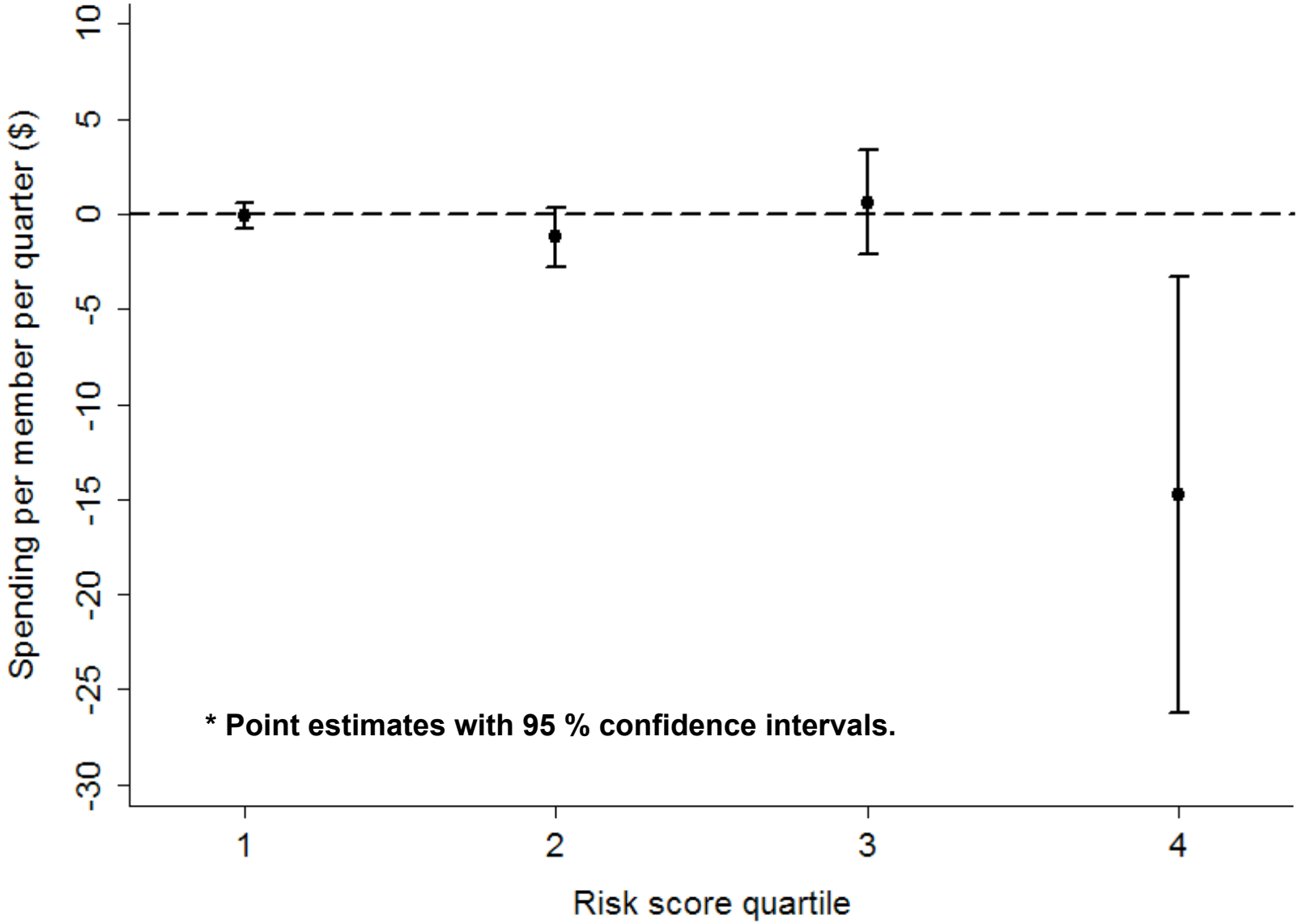
Table 2B. Prior Risk AQC groups vs. control

	Prior Risk groups (N=341,615)			Control Group (N=1,351,446)			Between-Group Difference (p-value)	
	Pre	Post	Δ	Pre	Post	Δ		
Total quarterly spending ($)	757	816	58	781	850	69	**-9.29**	**(0.13)**

Table 2C. No Prior Risk AQC groups vs. control

	No Prior Risk (N=40,468)			Control Group (N=1,351,446)			Between-Group Difference (p-value)	
	Pre	Post	Δ	Pre	Post	Δ		
Total quarterly spending ($)	698	725	27	791	859	68	**-45.52**	**(0.006)**

Figure 1. AQC effect on mean spending per member per quarter, by risk quartile (all AQC groups vs. control).*



Decomposition of Spending

1. Clinical category
2. Site and type of care
3. Risk-bearing experience
4. Enrollee risk quartile
5. **Price** vs. quantity

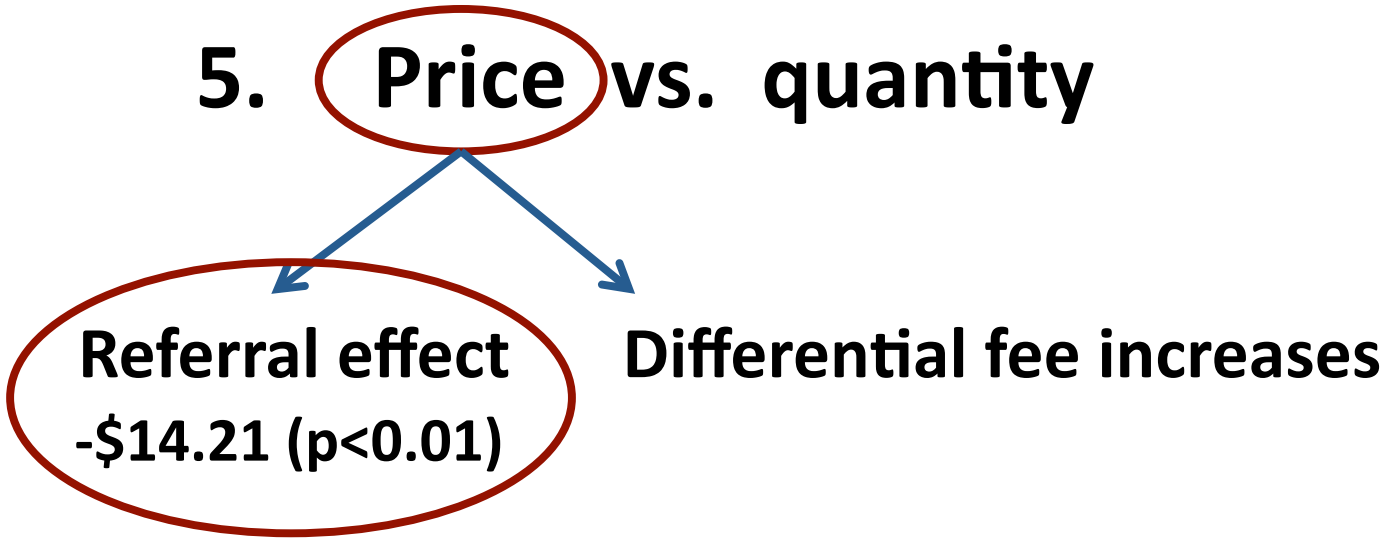


Table 5. Sensitivity Analyses – Spending Results

	All AQC vs. Non-AQC	P value	Prior Risk vs. Non-AQC	P value	No Prior Risk vs. Non-AQC	P value
Main results						
	-15.51	**(0.009)**	**-9.29**	**(0.13)**	**-45.52**	**(0.006)**
Sensitivity Analyses						
(1) 48-month enrollees	**-18.79**	**(0.01)**	**-12.64**	**(0.11)**	**-42.21**	**(0.05)**
(2) Categorical risk	**-16.08**	**(0.01)**	**-10.30**	**(0.11)**	**-46.31**	**(0.008)**
(3) Continuous trend	**-24.21**	**(0.05)**	**-19.21**	**(0.13)**	**-34.35**	**(0.3)**
(4) No propensity wts	**-15.85**	**(0.008)**	**-9.54**	**(0.13)**	**-45.82**	**(0.006)**
(5) Annual spending[#]	**-63.90**	**(0.006)**	**-42.47**	**(0.08)**	**-162.73**	**(0.01)**
(6) No cost-sharing	**-16.17**	**(0.007)**	**-9.80**	**(0.12)**	**-46.92**	**(0.004)**
(7) Rx benefit enrollees	**-19.18**	**(0.005)**	**-13.14**	**(0.07)**	**-48.02**	**(0.009)**

[#] Divide by 4 to compare

Table 3. Quality – Process Measures

% of eligible enrollees who met performance threshold	All AQC groups			Control groups			Difference (percentage points)	
	Pre	Post	Δ	Pre	Post	Δ	Unadjusted	Adjusted (p-value)
Chronic Care Management	79.1	82.4	3.3	79.6	80.1	0.5	**2.8**	**2.6 (0.000)**
Cardiovascular LDL screening	88.6	90.4	1.8	90.2	90.3	0.1	**1.7**	**1.8 (0.04)**
Diabetes: HbA1c testing	89.3	92.0	2.7	89.3	90.2	0.9	**1.8**	**1.7 (0.000)**
Diabetes: eye exam	58.5	63.6	5.1	61.3	60.8	-0.5	**5.6**	**5.5 (0.000)**
Diabetes: LDL screening	86.6	90.5	3.9	86.3	87.3	1.0	**2.9**	**2.8 (0.000)**
Diabetes: Nephrology screening	85.1	87.4	2.3	83.5	84.2	0.7	**1.6**	**1.6 (0.001)**
Depression: acute Rx	67.2	66.4	-0.8	66.9	66.9	0.0	**-0.8**	**-1.1 (0.59)**
Depression: continuation Rx	51.2	52.0	0.8	50.9	50.2	-0.7	**1.5**	**1.1 (0.59)**
Adult Preventive Care	75.7	79.3	3.6	72.8	76.2	3.4	**0.2**	**0.1 (0.67)**
Breast cancer screening	80.2	83.2	3.0	79.5	81.9	2.4	**0.6**	**0.6 (0.006)**
Cervical cancer screening	87.3	87.6	0.3	84.4	85.2	0.8	**-0.5**	**-0.5 (0.002)**
Colorectal cancer screening	64.2	70.7	6.5	60.0	66.5	6.5	**0.0**	**0.0 (0.97)**
Chlamydia screening (ages 21-24)	58.6	64.5	5.9	53.4	60.1	6.7	**-0.8**	**-0.8 (0.41)**
No antibiotic: acute bronchitis[&]	18.7	25.9	7.2	19.5	21.1	1.6	**5.6**	**5.5 (0.000)**
Pediatric Care	79.5	81.8	2.3	74.6	76.6	2.0	**0.3**	**0.7 (0.001)**
Appropriate testing for pharyngitis	93.9	96.0	2.1	82.1	88.4	6.3	**-4.2**	**-3.9 (0.000)**
Chlamydia screening (ages 16-20)	54.8	63.7	8.9	51.1	54.7	3.6	**5.3**	**5.4 (0.000)**
No antibiotic: upper respiratory infection	94.9	95.8	0.9	91.6	92.8	1.2	**-0.3**	**-0.4 (0.52)**
Well care: baby (ages <15 mo.)	93.0	93.1	0.1	92.7	92.9	0.2	**-0.1**	**-0.1 (0.91)**
Well care: child (ages 3-6)	92.3	94.1	1.8	90.0	91.2	1.2	**0.6**	**0.6 (0.09)**
Well care: adolescent	73.8	76.8	3.0	69.1	71.4	2.3	**0.7**	**0.9 (0.000)**

Table 4. Quality – Outcomes

	BCBS Network Average			AQC Weighted Average
	2007	2008	2009	2009
Diabetes				
HbA1c Control (<9 percent)	83.7	79.8	82.0	**80.7**
LDL-C Control (<100 mg/dL)	45.7	51.3	51.3	**57.7**
Blood Pressure Control (130/80)	30.9	36.7	38.0	**44.3**
Hypertension				
Blood Pressure Control (140/90)	68.4	70.3	69.5	**68.4**
Cardiovascular Disease				
LDL-C Control (<100 mg/dL)	64.2	69.5	69.5	**69.9**

Year 1 Conclusions

- **AQC effect on spending: -1.9% (-$15.51 PMPQ)**
- **AQC effect on quality: ⇧ Process (chronic, peds)**
- **Savings derived from shifting referrals to lower cost providers (price effect, not quantity effect)**
- **Savings larger for providers without experience**
- **Savings concentrated in:**
  - **Procedures, imaging, tests**
  - **Outpatient facility setting**
  - **High risk score enrollees**

Year 1 Caveats

- **AQC effect ≠ lower total BCBS payments**